

SEQUENCE LISTING

<110> Caimi, Perry G.
Famodu, Omolayo O.
Lee, Jiang-Ming
Miao, Guo-Hua
Maxwell, Carl A.

<120> Disease Resistance Factors

<130> BB-1356

<140> 10/009,791

<141>

<150> 60/133,041

<151> 1999-05-07

<160> 38

<170> Microsoft Office 97

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<211> 701

<212> DNA

<213> Zea mays

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tctaacagat ctcagggcat cccagagta tcttaccctc cttgtgcgca actgtcaacg 180
attgaaaact ctgaagatta gtgaatgttt catgcccgat ctggtcagtt tgttccgaac 240
tgcacaaaaca ctacaagagt tcgctggtgg ttcctttgaa gagcagggtc aacctgtggc 300
aagtagaaat tatgagaact actattttcc tccttcactg caccgcttga gtttgctcta 360
catgggaaca aatgatatgc aaatactgnt tccatattgct actgcactta agaagttaga 420
ccttcagttt acattccctt ccacagagga tcattgncag atagttcaac gctgctccaa 480
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Glu Asn Asp Glu Trp Ile Arg Glu Leu Ala Thr Ser Asn Ser Val Leu
      20              25              30
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```
Glu Thr Leu Asn Phe Phe Leu Thr Asp Leu Arg Ala Ser Pro Glu Tyr
      35              40              45
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```
Leu Thr Leu Leu Val Arg Asn Cys Gln Arg Leu Lys Thr Leu Lys Ile
      50              55              60
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```
Ser Glu Cys Phe Met Pro Asp Leu Val Ser Leu Phe Arg Thr Ala Gln
      65              70              75              80
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```
Thr Leu Gln Glu Phe Ala Gly Gly Ser Phe Glu Glu Gln Gly Gln Pro
      85              90              95
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Val	Ala	Ser	Arg	Asn	Tyr	Glu	Asn	Tyr	Tyr	Phe	Pro	Pro	Ser	Leu	His
			100					105					110		
Arg	Leu	Ser	Leu	Leu	Tyr	Met	Gly	Thr	Asn	Asp	Met	Gln	Ile	Leu	Xaa
		115					120					125			
Pro	Tyr	Ala	Thr	Ala	Leu	Lys	Lys	Leu	Asp	Leu	Gln	Phe	Thr	Phe	Leu
		130				135					140				
Ser	Thr	Glu	Asp	His	Xaa	Gln	Ile	Val	Gln	Arg	Cys	Ser	Asn	Leu	Glu
145					150					155					160
Thr	Leu	Glu	Val	Arg	Asp	Val	Ile	Gly	Asp	Arg	Gly	Leu	Gln	Xaa	Gly
				165					170					175	
Ala	Gln	Thr	Cys	Lys	Lys	Leu	His	Arg	Leu	Arg	Val	Glu	Arg	Gly	Asp
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 caggtttgca agaagaacaa ggaggagtct ctcaagtcgg gttgacaact gtagccgtag 180
 gatgccgtga actggaatac atagctgcct atgtgtctga tatcacaact ggggccctgg 240
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 aagagaggat aacagatttg cccttagaca atgggtgtccg tgcactgctg angggctgca 360
 cgaaacttcg gaggtttgct ctatacttga gaccaggggg actttcagat acaggccttg 420
 gctatattgg acagtacagt ggaattatcc aatacatgct tctgggtaat gttggggaaa 480
 cagatgatgg tctgatccgg tttgcattgg ggtgtgagaa cctgcggaag cttgagctaa 540
 ggagttgttg cttcagtgag caagcttttag cccgcgctat acggagtatg ccttccctga 600
 gatacgtgtg ggtacagggc tacaaggctt ctaagaactgg tcacgatctc atgctcatgg 660
 caggcccttc tggaacatag agtttacacc tcccagaaga ctggtcacga tctcatgctc 720
 atggcaggcc cttctggaac atagagttta cactcccag ttctgagaat gcaaatcgaa 780
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Asn Leu Leu Val Leu Ala Val Arg Asn Val Ile Gly Asp Arg Gly Leu
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Gly Val Val Ala Asp Thr Cys Lys Lys Leu Gln Arg Leu Arg Val Glu
          20           25          30

Arg Gly Asp Asp Asp Pro Gly Leu Gln Glu Glu Gln Gly Gly Val Ser
          35           40          45

Gln Val Gly Leu Thr Thr Val Ala Val Gly Cys Arg Glu Leu Glu Tyr
          50           55          60

Ile Ala Ala Tyr Val Ser Asp Ile Thr Asn Gly Ala Leu Glu Ser Ile
          65           70          75          80

Gly Thr Phe Cys Lys Asn Leu Cys Asp Phe Arg Leu Val Leu Leu Asp
          85           90          95

Arg Glu Glu Arg Ile Thr Asp Leu Pro Leu Asp Asn Gly Val Arg Ala
          100          105          110

Leu Leu Xaa Gly Cys Thr Lys Leu Arg Arg Phe Ala Leu Tyr Leu Arg
          115          120          125

Pro Gly Gly Leu Ser Asp Thr Gly Leu Gly Tyr Ile Gly Gln Tyr Ser
          130          135          140

Gly Ile Ile Gln Tyr Met Leu Leu Gly Asn Val Gly Glu Thr Asp Asp
          145          150          155          160

Gly Leu Ile Arg Phe Ala Leu Gly Cys Glu Asn Leu Arg Lys Leu Glu
          165          170          175

Leu Arg Ser Cys Cys Phe Ser Glu Gln Ala Leu Ala Arg Ala Ile Arg
          180          185          190

Ser Met Pro Ser Leu Arg Tyr Val Trp Val Gln Gly Tyr Lys Ala Ser
          195          200          205

Lys Thr Gly His Asp Leu Met Leu Met Ala Arg Pro Phe Trp Asn Ile
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Glu Phe Thr Pro Pro Arg Arg Leu Val Thr Ile Ser
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<212> DNA

<213> Glycine max

<400> 5

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caaggaccgc gacgccgttt cccaggtgtg tcgacgctgg tacgagctcg actcgctcac 120
ccgcaagcac gtcaccatcg cgctctgcta caccaccacc ccggctcgcc tccgccgccg 180
cttcccgcac ctcgagtcgc tcaagctcaa gggcaagccc cgagccgcaa tgttcaactt 240
gatacccgag gattggggcg gacacgtcac tccctgggtc aaagagattt ctcaagtact 300
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tcgattgcct caagagcctc cacttccgcc gcatgattgt caagggattc cgatcttcag 360
aatctcgctc gtgaccgcgg tcacgtgctt cacgctctca aagcttgaca agtgctccgg 420
tttcaacaac gatggtcctt tccatatcgg gtcgcttttg caaagaagtt taagagtcct 480
gt 482

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<212> PRT
<213> Glycine max

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Asp Arg Asp Ala Val Ser Gln Val Cys Arg Arg Trp Tyr Glu Leu Asp
      20              25              30
Ser Leu Thr Arg Lys His Val Thr Ile Ala Leu Cys Tyr Thr Thr Thr
      35              40              45
Pro Ala Arg Leu Arg Arg Arg Phe Pro His Leu Glu Ser Leu Lys Leu
      50              55              60
Lys Gly Lys Pro Arg Ala Ala Met Phe Asn Leu Ile Pro Glu Asp Trp
      65              70              75              80
Gly Gly His Val Thr Pro Trp Val Lys Glu Ile Ser Gln Val Leu Arg
      85              90              95
Xaa Leu Lys Ser Leu His Phe Arg Arg Met Ile Val
      100              105

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<210> 7
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<212> DNA
<213> Triticum aestivum

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tctgacatta caaatgcagc tcttgaggct attggcgcac tcagcaaaaa cctgaacgat 120

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ttccgacttg tcttgcttga tagagaggtg catataactg aactgcccct tgacaacggg 180
gttcgggctt tgctgagagg ttgcaccaa ctccggagggt ttgcatttta tgtgagacct 240
ggagctctat cagatattgg cctttcttan gttgggcgaa tttagcaaga ccgtccgcta 300
catgttgctt gggaatgccg gggggtctga tgatggactg ctggcatttg cacgangatg 360
cccaagcttg cagaaattgg agctaaggag ttgctgcttt agtgaacgtg cattggcagt 420
tgcagcctta cagctgaagt cactcagata tctttgggtg cagggataca aggcattctcc 480
tactggcacc gatctcatgg caatggtagc ccccttctgg aacattgagt ttattgcacc 540
aatcaagat gagccttgcc cagaggggtca ggacagattt ggcatactac tctctgggtg 600
ggaaggcaga ttgtcctagt cagtattccc tccatcgtag tgggagctaa aagaccacca 660
ccagtttact gacancatgt tgatgcagna accacatcgg anaggaattc actacagtgc 720
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<210> 8
<211> 177
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<213> Triticum aestivum

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Val His Val Ser Asp Ile Thr Asn Ala Ala Leu Glu Ala Ile Gly Ala
      20             25             30

Phe Ser Lys Asn Leu Asn Asp Phe Arg Leu Val Leu Leu Asp Arg Glu
      35             40             45

Val His Ile Thr Glu Leu Pro Leu Asp Asn Gly Val Arg Ala Leu Leu
      50             55             60

Arg Gly Cys Thr Lys Leu Arg Arg Phe Ala Phe Tyr Val Arg Pro Gly
      65             70             75             80

Ala Leu Ser Asp Leu Ala Phe Leu Xaa Leu Gly Glu Phe Ser Lys Thr
      85             90             95

Val Arg Tyr Met Leu Leu Gly Asn Ala Gly Gly Ser Asp Asp Gly Leu
      100            105            110

Leu Ala Phe Ala Arg Xaa Cys Pro Ser Leu Gln Lys Leu Glu Leu Arg
      115            120            125

Ser Cys Cys Phe Ser Glu Arg Ala Leu Ala Val Ala Ala Leu Gln Leu
      130            135            140

Lys Ser Leu Arg Tyr Leu Trp Val Gln Gly Tyr Lys Ala Ser Pro Thr
      145            150            155            160

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ttaccgaagg agtttgagga tcctgcgttc tccacgggtga ccatccagag ggatctgtac 180
tatggctatg atacattgat ggagaacgct tctgatccgt cgcataataga atttgctcac 240
cacaaggtca ctgggtcgaa gagatcgaan caagcctttt gccaatcaa gaatgggaat 300
caaagtgggt gcaatggggg ataattcaag gggtaaatt tctgggaaaa ccctccgcat 360
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atnaga 426

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 <212> PRT
 <213> Oryza sativa

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 Ser Gln Gly Leu Leu Phe Val Trp Pro Asp Glu Asn Gly Trp Glu Lys
 20 25 30
 Ala Thr Ala Thr Lys Pro Pro Met Leu Pro Lys Glu Phe Glu Asp Pro
 35 40 45
 Ala Phe Ser Thr Val Thr Ile Gln Arg Asp Leu Tyr Tyr Gly Tyr Asp
 50 55 60
 Thr Leu Met Glu Asn Val Ser Asp Pro Ser His Ile Glu Phe Ala His
 65 70 75 80
 His Lys Val Thr Gly Ser Lys Arg Ser Xaa Gln Ala Phe Cys Gln Phe
 85 90 95
 Lys Asn Gly Asn Gln Ser Trp Cys Asn Gly Gly
 100 105

<210> 11
 <211> 465
 <212> DNA
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 caatttttaa cgaaacaaac gcgaccacaga agcagaagaa acctctccct aacccttgca 180
 cgcggtgcgg cgccaccctc aacgggttgaa gccgatcgat tatacccaga ggccgaaaat 240
 aacgaaactg aggaagagtt tagcgacgag agctcttcct ctaaattcac ttggagggat 300
 cactggtacc ctgtctcggt aattgaagat ctgaaccctc tcttgcccac accgtttcag 360
 cttctgggtc gtgaaatcgt gctctggtac gacaagtcca tttcccaatg gggttgctttt 420
 gatgacaaat gcccccatcg tcttgcccct ttatctgaan ggagg 465

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Ser Leu Ile Glu Asp Leu Asn Pro Leu Leu Pro Thr Pro Phe Gln Leu
20 25 30

Leu Gly Arg Glu Ile Val Leu Trp Tyr Asp Lys Ser Ile Ser Gln Trp
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Val Ala Phe Asp Asp Lys Cys Pro His Arg Leu Ala Pro Leu Ser Glu
50 55 60

Xaa Arg
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<210> 13
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<212> DNA
<213> Triticum aestivum

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ggacctcttc tatgggtatg acacgttgat ggagaacgtc tctgatccct cgcataataga 180
atttgctcac cacaaggtca ctggacnaag agatanagcc aagcctttgc catttataaat 240

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ggaatcaant ggcncatggg gatattcang ggcaaatacc ggcaatcctc gcancactgc 300
aactttcgan gccccttggc tatgcactgn aacanaatnn agattgacac caaattaacc 360
gattntggga gatcacaaat gggtcntatg gatttgctcc ttcnanattc caaaggccca 420
aggaaaatcg ttctattgtc cgtantgtc naaacttttc antttaaatn ccacnaagga 480
tgnngaattn tccccnantg tacaacattg ngcncaattn gncatgangc aantatctct 540
tcagncacaa agttccgt 558

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<210> 14
<211> 105
<212> PRT
<213> Triticum aestivum

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<220>
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<223> Xaa = any amino acid

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<220>
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<220>
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<220>
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<220>
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Gln Gly Leu Leu Phe Val Trp Pro Asp Glu Asn Gly Trp Asp Lys Ala
 1          5          10          15

Lys Ala Thr Lys Pro Pro Met Leu Pro Lys Glu Phe Asp Asp Pro Ala
          20          25          30

Phe Ser Thr Val Thr Ile Gln Arg Asp Leu Phe Tyr Gly Tyr Asp Thr
          35          40          45

Leu Met Glu Asn Val Ser Asp Pro Ser His Ile Glu Phe Ala His His
 50          55          60

```

Lys Val Thr Gly Xaa Arg Asp Xaa Ala Lys Pro Leu Pro Phe Lys Met
65 70 75 80

Glu Ser Xaa Gly Xaa Trp Gly Tyr Ser Xaa Ala Asn Thr Gly Asn Pro
85 90 95

Arg Xaa Thr Ala Thr Phe Xaa Ala Pro
100 105

<210> 15
<211> 562
<212> DNA
<213> Zea mays

<220>
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ttcctggaag aatgtntaat tgccgatgaa gggagcgaat ggctccatga actcgccgtc 180
aacaattctg ttctgggtgac actgaacttc tacatgacag aactcaaagt ggagcctgcc 240
gatctggagc ttcttgcaag gaactgtaaa tcattgattt ctctgaagat gagtgactgc 300
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gcgctttttt cgaaatcgga gactacacca agtacgaaaa ggtcaagctc ccacctaaagc 420
tatgcttctt ggggggtctt accttcattg gtaaaaacga gatgcccggt aatctttccg 480
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<210> 16
<211> 186
<212> PRT
<213> Zea mays

<220>
<221> UNSURE
<222> (46)
<223> Xaa = any amino acid

<220>
<221> UNSURE
<222> (111)
<223> Xaa = any amino acid

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20 25 30

Ser Cys Arg Ser Leu Arg Thr Leu Phe Leu Glu Glu Cys Xaa Ile Ala
35 40 45

Asp Glu Gly Ser Glu Trp Leu His Glu Leu Ala Val Asn Asn Ser Val
 50 55 60
 Leu Val Thr Leu Asn Phe Tyr Met Thr Glu Leu Lys Val Glu Pro Ala
 65 70 75 80
 Asp Leu Glu Leu Leu Ala Arg Asn Cys Lys Ser Leu Ile Ser Leu Lys
 85 90 95
 Met Ser Asp Cys Asp Leu Ser Asp Leu Met Val Phe Ser Lys Xaa Ser
 100 105 110
 Lys Ala Leu Gln Glu Phe Ala Gly Gly Ala Phe Phe Glu Ile Gly Glu
 115 120 125
 Tyr Thr Lys Tyr Glu Lys Val Lys Leu Pro Pro Lys Leu Cys Phe Leu
 130 135 140
 Gly Gly Leu Thr Phe Met Gly Lys Asn Glu Met Pro Val Asn Leu Ser
 145 150 155 160
 Val Phe Cys Val Arg Leu Arg Asn Trp Thr Cys Ser Thr Leu Ser Leu
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 Thr Thr Glu Asp His Cys Gln Leu Asn Arg
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<210> 17
 <211> 1728
 <212> DNA
 <213> Zea mays

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 <211> 429
 <212> PRT
 <213> Zea mays

<400> 18
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 35 40 45
 Ala Ser Pro Glu Tyr Leu Thr Leu Leu Val Arg Asn Cys Gln Arg Leu
 50 55 60
 Lys Thr Leu Lys Ile Ser Glu Cys Phe Met Pro Asp Leu Val Ser Leu
 65 70 75 80
 Phe Arg Thr Ala Gln Thr Leu Gln Glu Phe Ala Gly Gly Ser Phe Glu
 85 90 95
 Glu Gln Gly Gln Pro Val Ala Ser Arg Asn Tyr Glu Asn Tyr Tyr Phe
 100 105 110
 Pro Pro Ser Leu His Arg Leu Ser Leu Leu Tyr Met Gly Thr Asn Asp
 115 120 125
 Met Gln Ile Leu Phe Pro Tyr Ala Thr Ala Leu Lys Lys Leu Asp Leu
 130 135 140
 Gln Phe Thr Phe Leu Ser Thr Glu Asp His Cys Gln Ile Val Gln Arg
 145 150 155 160
 Cys Ser Asn Leu Glu Thr Leu Glu Val Arg Asp Val Ile Gly Asp Arg
 165 170 175
 Gly Leu Gln Val Val Ala Gln Thr Cys Lys Lys Leu His Arg Leu Arg
 180 185 190
 Val Glu Arg Gly Asp Asp Asp Gln Gly Gly Leu Glu Asp Glu Gln Gly
 195 200 205
 Arg Ile Ser Gln Val Gly Leu Met Ala Ile Ala Gln Gly Cys Pro Glu
 210 215 220
 Leu Thr Tyr Trp Ala Ile His Val Ser Asp Ile Thr Asn Ala Ala Leu
 225 230 235 240
 Glu Ala Val Gly Thr Cys Ser Lys Asn Leu Asn Asp Phe Arg Leu Val
 245 250 255
 Leu Leu Asp Arg Glu Ala His Ile Thr Glu Leu Pro Leu Asp Asn Gly
 260 265 270

Val Arg Ala Leu Leu Arg Gly Cys Thr Lys Leu Arg Arg Phe Ala Phe
 275 280 285
 Tyr Val Arg Pro Gly Ala Leu Ser Asp Val Gly Leu Gly Tyr Val Gly
 290 295 300
 Glu Phe Ser Lys Ser Ile Arg Tyr Met Leu Leu Gly Asn Val Gly Glu
 305 310 315 320
 Ser Asp Asn Gly Ile Ile Gln Leu Ser Lys Gly Cys Pro Ser Leu Gln
 325 330 335
 Lys Leu Glu Val Arg Gly Cys Leu Phe Ser Glu His Ala Leu Ala Leu
 340 345 350
 Ala Ala Leu Gln Leu Lys Ser Leu Arg Tyr Leu Trp Val Gln Gly Phe
 355 360 365
 Arg Ser Ser Pro Thr Gly Thr Asp Ile Met Ala Met Val Arg Pro Phe
 370 375 380
 Trp Asn Ile Glu Tyr Ile Val Pro Asp Gln Asp Glu Pro Cys Pro Glu
 385 390 395 400
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<210> 19

<211> 2240

<212> DNA

<213> Oryza sativa

<400> 19

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<210> 20

<211> 597

<212> PRT

<213> *Oryza sativa*

<400> 20

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Phe Gly Gly Ala Gly Ser Ile Pro Glu Glu Ala Leu His Leu Val Leu
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Gly Tyr Val Asp Asp Pro Arg Asp Arg Glu Ala Val Ser Leu Val Cys
      35                      40                      45

Arg Arg Trp His Arg Ile Asp Ala Leu Thr Arg Lys His Val Thr Val
      50                      55                      60

Pro Phe Cys Tyr Ala Ala Ser Pro Ala His Leu Leu Ala Arg Phe Pro
      65                      70                      75                      80

Arg Leu Glu Ser Leu Ala Val Lys Gly Lys Pro Arg Ala Ala Met Tyr
      85                      90                      95

Gly Leu Ile Pro Glu Asp Trp Gly Ala Tyr Ala Arg Pro Trp Val Ala
      100                     105                     110

Glu Leu Ala Ala Pro Leu Glu Cys Leu Lys Ala Leu His Leu Arg Arg
      115                     120                     125

Met Val Val Thr Asp Asp Asp Leu Ala Ala Leu Val Arg Ala Arg Gly
      130                     135                     140

His Met Leu Gln Glu Leu Lys Leu Asp Lys Cys Ser Gly Phe Ser Thr
      145                     150                     155                     160

Asp Ala Leu Arg Leu Val Ala Arg Ser Cys Arg Ser Leu Arg Thr Leu
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Phe Leu Glu Glu Cys Ser Ile Ala Asp Asn Gly Thr Glu Trp Leu His
      180                     185                     190

Asp Leu Ala Val Asn Asn Pro Val Leu Glu Thr Leu Asn Phe His Met
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Thr	Glu	Leu	Thr	Val	Val	Pro	Ala	Asp	Leu	Glu	Leu	Leu	Ala	Lys	Lys	210	215	220
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Leu	Ile	Gly	Phe	Phe	Arg	Met	Ala	Ala	Ser	Leu	Gln	Glu	Phe	Ala	Gly	245	250	255
Gly	Ala	Phe	Ile	Glu	Gln	Gly	Glu	Leu	Thr	Lys	Tyr	Gly	Asn	Val	Lys	260	265	270
Phe	Pro	Ser	Arg	Leu	Cys	Ser	Leu	Gly	Leu	Thr	Tyr	Met	Gly	Thr	Asn	275	280	285
Glu	Met	Pro	Ile	Ile	Phe	Pro	Phe	Ser	Ala	Leu	Leu	Lys	Lys	Leu	Asp	290	295	300
Leu	Gln	Tyr	Thr	Phe	Leu	Thr	Thr	Glu	Asp	His	Cys	Gln	Leu	Ile	Ala	305	310	315
Lys	Cys	Pro	Asn	Leu	Leu	Val	Leu	Ala	Val	Arg	Asn	Val	Ile	Gly	Asp	325	330	335
Arg	Gly	Leu	Gly	Val	Val	Ala	Asp	Thr	Cys	Lys	Lys	Leu	Gln	Arg	Leu	340	345	350
Arg	Val	Glu	Arg	Gly	Asp	Asp	Asp	Pro	Gly	Leu	Gln	Glu	Glu	Gln	Gly	355	360	365
Gly	Val	Ser	Gln	Val	Gly	Leu	Thr	Thr	Val	Ala	Val	Gly	Cys	Arg	Glu	370	375	380
Leu	Glu	Tyr	Ile	Ala	Ala	Tyr	Val	Ser	Asp	Ile	Thr	Asn	Gly	Ala	Leu	385	390	395
Glu	Ser	Ile	Gly	Thr	Phe	Cys	Lys	Asn	Leu	Cys	Asp	Phe	Arg	Leu	Val	405	410	415
Leu	Leu	Asp	Arg	Glu	Glu	Arg	Ile	Thr	Asp	Leu	Pro	Leu	Asp	Asn	Gly	420	425	430
Val	Arg	Ala	Leu	Leu	Arg	Gly	Cys	Thr	Lys	Leu	Arg	Arg	Phe	Ala	Leu	435	440	445
Tyr	Leu	Arg	Pro	Gly	Gly	Leu	Ser	Asp	Thr	Gly	Leu	Gly	Tyr	Ile	Gly	450	455	460
Gln	Tyr	Ser	Gly	Ile	Ile	Gln	Tyr	Met	Leu	Leu	Gly	Asn	Val	Gly	Glu	465	470	475
Thr	Asp	Asp	Gly	Leu	Ile	Arg	Phe	Ala	Leu	Gly	Cys	Glu	Asn	Leu	Arg	485	490	495
Lys	Leu	Glu	Leu	Arg	Ser	Cys	Cys	Phe	Ser	Glu	Gln	Ala	Leu	Ala	Arg	500	505	510
Ala	Ile	Arg	Ser	Met	Pro	Ser	Leu	Arg	Tyr	Val	Trp	Val	Gln	Gly	Tyr	515	520	525

Lys Ala Ser Lys Thr Gly His Asp Leu Met Leu Met Ala Arg Pro Phe
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Trp Asn Ile Glu Phe Thr Pro Pro Ser Ser Glu Asn Ala Asn Arg Met
545 550 555 560

Arg Glu Asp Gly Glu Pro Cys Val Asp Ser Gln Ala Gln Ile Leu Ala
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Tyr Tyr Ser Leu Ala Gly Lys Arg Ser Asp Cys Pro Arg Ser Val Val
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Pro Leu Tyr Pro Ala
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<210> 21

<211> 2288

<212> DNA

<213> Glycine max

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2288

<210> 22

<211> 606

<212> PRT

<213> Glycine max

<400> 22

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Lys	His	Val	Thr	Ile	Ala	Leu	Cys	Tyr	Thr	Thr	Thr	Pro	Ala	Arg	Leu	
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Asp	Cys	Glu	Ile	Leu	Asp	Leu	Val	Asn	Phe	Phe	Lys	His	Ala	Ser	Ala	
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 Ile Gly Lys Asn Glu Leu Pro Ile Val Phe Met Phe Ala Ala Val Leu
 290 295 300
 Lys Lys Leu Asp Leu Leu Tyr Ala Met Leu Asp Thr Glu Asp His Cys
 305 310 315 320
 Met Leu Ile Gln Arg Cys Pro Asn Leu Glu Val Leu Glu Thr Arg Asn
 325 330 335
 Val Ile Gly Asp Arg Gly Leu Glu Val Leu Gly Arg Cys Cys Lys Arg
 340 345 350
 Leu Lys Arg Leu Arg Ile Glu Arg Gly Asp Asp Asp Gln Gly Met Glu
 355 360 365
 Asp Glu Glu Gly Thr Val Ser His Arg Gly Leu Ile Ala Leu Ser Gln
 370 375 380
 Gly Cys Ser Glu Leu Glu Tyr Met Ala Val Tyr Val Ser Asp Ile Thr
 385 390 395 400
 Asn Ala Ser Leu Glu His Ile Gly Thr His Leu Lys Asn Leu Cys Asp
 405 410 415
 Phe Arg Leu Val Leu Leu Asp His Glu Glu Lys Ile Thr Asp Leu Pro
 420 425 430
 Leu Asp Asn Gly Val Arg Ala Leu Leu Arg Gly Cys Asp Lys Leu Arg
 435 440 445
 Arg Phe Ala Leu Tyr Leu Arg Arg Gly Gly Leu Thr Asp Val Gly Leu
 450 455 460
 Gly Tyr Ile Gly Gln Tyr Ser Pro Asn Val Arg Trp Met Leu Leu Gly
 465 470 475 480
 Tyr Val Gly Glu Ser Asp Ala Gly Leu Leu Glu Phe Ala Lys Gly Cys
 485 490 495
 Pro Ser Leu Gln Lys Leu Glu Met Arg Gly Cys Leu Phe Phe Ser Glu
 500 505 510
 Arg Ala Leu Ala Val Ala Ala Thr Gln Leu Thr Ser Leu Arg Tyr Leu
 515 520 525
 Trp Val Gln Gly Tyr Gly Val Ser Pro Ser Gly Arg Asp Leu Leu Val
 530 535 540
 Met Ala Arg Pro Phe Trp Asn Ile Glu Leu Ile Pro Ser Arg Lys Val
 545 550 555 560
 Ala Thr Asn Thr Asn Pro Asp Glu Thr Val Val Val Glu His Pro Ala
 565 570 575
 His Ile Leu Ala Tyr Tyr Ser Leu Ala Gly Gln Arg Ser Asp Phe Pro
 580 585 590

Asp Thr Val Val Pro Leu Asp Thr Ala Thr Cys Val Asp Thr
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<210> 23
<211> 577
<212> DNA
<213> Triticum aestivum

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<223> n = A, T, C, or G

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agcctgccga tctggagctt ctgcaagga actgtaaatc attgatttct ctgaagatga 180
gtgactgcga tctttcggat ttgattggtt ttctccaaac ctccaaggca ctgcaagaat 240
ccgctgggag gcgctttttt cgaagtcgga gagtacacca agtacgaaaa ggcaantccc 300
acctagctat gtcctggggg ggcctacct tcatgggtaa aaacgaatcc cgttactttc 360
cgtatccgcg tcgcttaaaa actggacctg catacacttc ctcacaacng aaatnacgtc 420
acttaacgct aaagcccaac ctacgggtct cnaggggggc cggtagcaat cgccctatat 480
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cctganaanc ccttccactg gtatacaaag gccgacg 577

<210> 24
<211> 159
<212> PRT
<213> Triticum aestivum

<220>
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<222> (98)
<223> Xaa = any amino acid

<220>
<221> UNSURE
<222> (136)
<223> Xaa = any amino acid

<220>
<221> UNSURE
<222> (138)
<223> Xaa = any amino acid

<400> 24
Thr Leu Phe Leu Glu Glu Cys Ile Ile Ala Asp Glu Gly Ser Glu Trp
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Leu His Glu Leu Ala Val Asn Asn Ser Val Leu Val Thr Leu Asn Phe
20 25 30
Tyr Met Thr Glu Leu Lys Val Glu Pro Ala Asp Leu Glu Leu Leu Ala
35 40 45
Arg Asn Cys Lys Ser Leu Ile Ser Leu Lys Met Ser Asp Cys Asp Leu
50 55 60
Ser Asp Leu Ile Gly Phe Leu Gln Thr Ser Lys Ala Leu Gln Glu Ser
65 70 75 80
Ala Gly Arg Arg Phe Phe Arg Ser Arg Arg Val His Gln Val Arg Lys
85 90 95
Gly Xaa Ser His Leu Ala Met Leu Leu Gly Gly Pro Thr Phe Met Gly
100 105 110
Lys Asn Glu Ser Arg Tyr Phe Pro Tyr Pro Arg Arg Leu Lys Thr Gly
115 120 125
Pro Ala Tyr Thr Ser Ser Gln Xaa Lys Xaa Arg His Leu Thr Leu Lys
130 135 140
Pro Asn Leu Arg Val Ser Arg Gly Ala Gly Thr Asn Arg Pro Ile
145 150 155

<210> 25
<211> 486
<212> DNA
<213> Triticum aestivum

<220>
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<220>
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<222> (470)
<223> n = A, T, C, or G

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cgcgcgctca gcctggacgg cggcggcgtc ccggaggagg cgctgcacct ggtgctcggc 180
tacgtggacg acccgcnega ccgcgaggcg gcctcgctgg cgtgccgcgg ctggcaccac 240
atcgacgcgc tcacgcggaa gcacgtcacc gtgcncttct gctacgceng tgtccccngc 300
gcgcctgctc gcgcgcttcc cgcgcctcga gtcnctcggg gtcaanggca agccccgcgc 360
gccatgtacg gctcatcccc gacgactggg gcgcctacnc ccgggcccctg cgtccctgag 420
ctcgccgccc cgctcgattg nctcaaggcg gctcaacctt gncncnaan gtcgtcaccg 480
acgaca 486

<210> 26
<211> 134
<212> PRT

<213> Triticum aestivum

<220>

<221> UNSURE

<222> (38)

<223> Xaa = any amino acid

<220>

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<222> (64)

<223> Xaa = any amino acid

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<221> UNSURE

<222> (69)

<223> Xaa = any amino acid

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<223> Xaa = any amino acid

<400> 26

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Leu	Asp	Gly	Gly	Gly	Val	Pro	Glu	Glu	Ala	Leu	His	Leu	Val	Leu	Gly
		20						25					30		

Tyr	Val	Asp	Asp	Pro	Xaa	Asp	Arg	Glu	Ala	Ala	Ser	Leu	Ala	Cys	Arg
		35					40					45			

Arg	Trp	His	His	Ile	Asp	Ala	Leu	Thr	Arg	Lys	His	Val	Thr	Val	Xaa
	50					55					60				

Phe	Cys	Tyr	Ala	Xaa	Val	Pro	Xaa	Ala	Pro	Ala	Arg	Ala	Leu	Pro	Ala
65					70				75					80	

Pro	Arg	Val	Xaa	Arg	Gly	Gln	Xaa	Gln	Ala	Arg	Ala	Ala	Met	Tyr	Gly
				85				90						95	

Ser Ser Pro Thr Thr Gly Ala Pro Thr Pro Gly Pro Cys Val Pro Glu
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Leu Ala Ala Pro Leu Asp Xaa Leu Lys Ala Ala Gln Pro Cys Xaa Xaa
115 120 125

Xaa Ser Ser Pro Thr Thr
130

<210> 27
<211> 1074
<212> DNA
<213> Triticum aestivum

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gaacgatttc cgacttgccc tgcttgatag agagggtgcat ataactgaac tgccccttga 180
caacgggggt cgggctttgc tgagaggttg caccaaaactc cggaggtttg cattttatgt 240
gagacctgga gctctatcag atattggcct ttcttatgtt ggcgaattta gcaagaccgt 300
ccgctacatg ttgcttggga atgccggggg gtctgatgat ggactgctgg catttgcacg 360
aggatgcccc agcttgcaga aattggagct aaggagtgtg tgcttttagtg aacgtgcatt 420
ggcagttgca gccttacagc tgaagtcaact cagatatctt tgggtgcagg gatacaaggc 480
atctcctact ggcaccgatc tcatggcaat ggtacgcccc ttctggaaca ttgagtttat 540
tgcaccaaatt caagatgagc cttgcccaga gggtcaggca cagattctgg catactactc 600
tctggctggg gcaaggacag attgtcctca gtcagtaatt cccctccatc cgtcagtggg 660
aagctaaaaa gaccaccacc agtttgactg tacatacatg tttgatgcca gcaaaaacca 720
caatgcggta tagggacatt ccaccttaca gtgccaatta cgggactgaa agctcaagta 780
aaagcgaccc actctgaact gccttgggtat cttaggggca acatttttgg gtaagctgtt 840
catctggcca acatggatat ctttgtgtac tacaccattt tgacatggct cggacacgca 900
tttttgtaat aatgtgcccc gttgtaatgg catttttctg ttcttgagct ttgcccactg 960
tattgttggt ctacaaacag tattggatta gttgtgtgac catctgtgaa acaatctgca 1020
caatgttatg tttaacccat gaatatcttg aaaaaaaaaa aaaaaaaaaa aaaa 1074

<210> 28
<211> 221
<212> PRT
<213> Triticum aestivum

<400> 28
His Glu Val Gly Leu Met Ala Val Ala Glu Gly Cys Pro Asp Leu Glu
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Tyr Trp Ala Val His Val Ser Asp Ile Thr Asn Ala Ala Leu Glu Ala
20 25 30

Ile Gly Ala Phe Ser Lys Asn Leu Asn Asp Phe Arg Leu Val Leu Leu
35 40 45

Asp Arg Glu Val His Ile Thr Glu Leu Pro Leu Asp Asn Gly Val Arg
50 55 60

Ala Leu Leu Arg Gly Cys Thr Lys Leu Arg Arg Phe Ala Phe Tyr Val
65 70 75 80

- Arg Pro Gly Ala Leu Ser Asp Ile Gly Leu Ser Tyr Val Gly Glu Phe
85 90 95

Ser Lys Thr Val Arg Tyr Met Leu Leu Gly Asn Ala Gly Gly Ser Asp
 100 105 110
 Asp Gly Leu Leu Ala Phe Ala Arg Gly Cys Pro Ser Leu Gln Lys Leu
 115 120 125
 Glu Leu Arg Ser Cys Cys Phe Ser Glu Arg Ala Leu Ala Val Ala Ala
 130 135 140
 Leu Gln Leu Lys Ser Leu Arg Tyr Leu Trp Val Gln Gly Tyr Lys Ala
 145 150 155 160
 Ser Pro Thr Gly Thr Asp Leu Met Ala Met Val Arg Pro Phe Trp Asn
 165 170 175
 Ile Glu Phe Ile Ala Pro Asn Gln Asp Glu Pro Cys Pro Glu Gly Gln
 180 185 190
 Ala Gln Ile Leu Ala Tyr Tyr Ser Leu Ala Gly Ala Arg Thr Asp Cys
 195 200 205
 Pro Gln Ser Val Ile Pro Leu His Pro Ser Val Gly Ser
 210 215 220

<210> 29

<211> 1812

<212> DNA

<213> *Oryza sativa*

<220>

<221> unsure

<222> (1108)

<223> n = A, T, C, or G

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ttcctcctcc	tccatcgctg	tactactctg	ttcttctgga	agaacactgg	tctcctcgcc	240
tacctcagtc	accactcacc	acaccaggtg	cgagctataa	aaaccggcac	gccaaaaatc	300
ttcaaaacca	cacagaaacc	tcagatctcc	gaggcttcca	agcgagtcga	cgaaaaatgcc	360
cgtgatggct	ccgaccgcat	ctcttctcct	ctccccgagg	ccgctgccgg	cgagccgccg	420
ggtccccctcg	ctccccggcg	tctcggcttc	cggtcgcctg	cgctccgcc	gcgcccgcg	480
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cggggagacc	gagccgagca	cgctcgcggc	cgacgagaag	ttcgtgtgga	gggaccactg	600
gtaccccgctg	tccctcgctg	aggacctcga	ccccagcgtg	cccaccccg	tccagctcct	660
caaccgcgac	ctcgtcatct	ggaaggaccc	aaaatccggc	gagtgggtcg	ccctcgacga	720
ccgttgcccc	catgcctc	cgcccctctc	ggagggcg	atcgatgaga	cggggtgctt	780
gcagtgctca	taccacggct	ggtcattcga	tggctccggc	gcgtgcaccc	ggatcccgca	840
ggcggcgccc	gaggggccc	aggccaaggc	tgtgaggtcg	ccgaaggcgt	gcgcgatcaa	900
gttccccacc	ctcgtctcgc	aagggtgctg	cttcgtgtgg	cccgcgaga	atgggtggga	960
gaaggccacg	gctaccaagc	ctccgatgtt	accgaaggag	tttgaggatc	ctgcgttctc	1020
cacggtgacc	atccagagg	atctgtacta	tggctatgat	acattgatgg	agaacgtctc	1080
tgatccgctg	catatagaat	ttgctcanca	caaggtcact	ggtcgaagag	atcgagccag	1140
gcctttgcca	ttcaagatgg	aatcaagtgg	tgcattggga	tattcaggg	caaattctgg	1200
aaaccctcgc	atcagtgcaa	cttttgtggc	cccttgctat	gactgaaca	aaattgagat	1260
agacacaaaag	ttacccattt	ttggagatca	gaaatgggtc	atatggattt	gctctttcaa	1320
cattccaatg	gccccaggga	agactcgttc	tatagtttgt	agtgtcggga	actttttcca	1380
gtttagcatg	ccaggaaaag	catggtggca	gcttgtccct	cgatggatg	agcattggac	1440
ttcaaatttg	gtctatgatg	gtgatatgat	agttctgcaa	gggcaagaga	agattttctt	1500

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gtctgcatcg aaggagtctt ctgcagatat taatcagcag tacacaaaga tcacgtttac 1560
acccacgcag gctgaccggt ttgttttggc attccgggca tggctaagga aatttggtta 1620
cagccaacct gactgggttg gaaatcctag ccaagaagtg ttgccttcca ctgtcctttc 1680
aaagcgtgag atgctagata gatatgagca gcacacactg aaatgctcat cttgcaaagg 1740
ggcatacaac gccttcaga ctctgcaaaa ggtcttcatt ggagcgacag tggccgttct 1800
attattgctt gc 1812

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<210> 30

<211> 485

<212> PRT

<213> *Oryza sativa*

<220>

<221> UNSURE

<222> (251)

<223> Xaa = any amino acid

<400> 30

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  1              5              10              15

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Leu Pro Ala Ser Arg Arg Val Pro Ser Leu Pro Ala Leu Ser Ala Ser
              20              25              30

```

```

Gly Arg Leu Arg Leu Arg Arg Ala Arg Ala Asp Thr Arg Leu Arg Val
  35              40              45

```

```

Ala Ala Pro Pro Ser Val Pro Gly Glu Ala Asp Gln Ala Pro Gly Glu
  50              55              60

```

```

Thr Glu Pro Ser Thr Ser Ser Ala Asp Glu Lys Phe Val Trp Arg Asp
  65              70              75              80

```

```

His Trp Tyr Pro Val Ser Leu Val Glu Asp Leu Asp Pro Ser Val Pro
              85              90              95

```

```

Thr Pro Phe Gln Leu Leu Asn Arg Asp Leu Val Ile Trp Lys Asp Pro
  100              105              110

```

```

Lys Ser Gly Glu Trp Val Ala Leu Asp Asp Arg Cys Pro His Arg Leu
  115              120              125

```

```

Ala Pro Leu Ser Glu Gly Arg Ile Asp Glu Thr Gly Cys Leu Gln Cys
  130              135              140

```

```

Ser Tyr His Gly Trp Ser Phe Asp Gly Ser Gly Ala Cys Thr Arg Ile
  145              150              155              160

```

```

Pro Gln Ala Ala Pro Glu Gly Pro Glu Ala Lys Ala Val Arg Ser Pro
              165              170              175

```

```

Lys Ala Cys Ala Ile Lys Phe Pro Thr Leu Val Ser Gln Gly Leu Leu
  180              185              190

```

```

Phe Val Trp Pro Asp Glu Asn Gly Trp Glu Lys Ala Thr Ala Thr Lys
  195              200              205

```

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Pro Pro Met Leu Pro Lys Glu Phe Glu Asp Pro Ala Phe Ser Thr Val
  210              215              220

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Thr Ile Gln Arg Asp Leu Tyr Tyr Gly Tyr Asp Thr Leu Met Glu Asn
 225 230 235 240
 Val Ser Asp Pro Ser His Ile Glu Phe Ala Xaa His Lys Val Thr Gly
 245 250 255
 Arg Arg Asp Arg Ala Arg Pro Leu Pro Phe Lys Met Glu Ser Ser Gly
 260 265 270
 Ala Trp Gly Tyr Ser Gly Ser Asn Ser Gly Asn Pro Arg Ile Ser Ala
 275 280 285
 Thr Phe Val Ala Pro Cys Tyr Ala Leu Asn Lys Ile Glu Ile Asp Thr
 290 295 300
 Lys Leu Pro Ile Phe Gly Asp Gln Lys Trp Val Ile Trp Ile Cys Ser
 305 310 315 320
 Phe Asn Ile Pro Met Ala Pro Gly Lys Thr Arg Ser Ile Val Cys Ser
 325 330 335
 Ala Arg Asn Phe Phe Gln Phe Ser Met Pro Gly Lys Ala Trp Trp Gln
 340 345 350
 Leu Val Pro Arg Trp Tyr Glu His Trp Thr Ser Asn Leu Val Tyr Asp
 355 360 365
 Gly Asp Met Ile Val Leu Gln Gly Gln Glu Lys Ile Phe Leu Ser Ala
 370 375 380
 Ser Lys Glu Ser Ser Ala Asp Ile Asn Gln Gln Tyr Thr Lys Ile Thr
 385 390 395 400
 Phe Thr Pro Thr Gln Ala Asp Arg Phe Val Leu Ala Phe Arg Ala Trp
 405 410 415
 Leu Arg Lys Phe Gly Asn Ser Gln Pro Asp Trp Phe Gly Asn Pro Ser
 420 425 430
 Gln Glu Val Leu Pro Ser Thr Val Leu Ser Lys Arg Glu Met Leu Asp
 435 440 445
 Arg Tyr Glu Gln His Thr Leu Lys Cys Ser Ser Cys Lys Gly Ala Tyr
 450 455 460
 Asn Ala Phe Gln Thr Leu Gln Lys Val Phe Met Gly Ala Thr Val Ala
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 Val Leu Leu Leu Leu
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<210> 31

<211> 1930

<212> DNA

<213> Glycine max

<400> 31

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 gaaaaccatt gatggcgctc cctcactcca tctctgcctt agccaccaca ctcacactct 180

```

cctccccaat aaccaaacc cataaagtta acccctttcc cttttcctcg aaccgaaatt 240
cacaattttt aacgaaacaa acgcgaccca gaagcagaag aaacctctcc ctaacccttg 300
cacgcgtttgc ggcgccaccc tcaacggttg aagccgatcg attataccca gaggccgaaa 360
ataacgaaac tgaggaagag tttagcgacg agagctcttc ctctaaattc acttggaggg 420
atcactggta ccctgtctcg ttaattgaag atctgaaccc tctcttgccc acaccgtttc 480
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ggaagttgca gtgttcttat catgggtggt cttttgatgg gtgtggatct tgtgttaaga 660
ttcctcaggg ttcatctgaa ggccccgaag cacgtgctat tggatctcct aaagcatgtg 720
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tcttccagtt ctcatgcca ggcctgcct ggtggcaagt caactgagta atcttactgt 1260
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<210> 32
 <211> 563
 <212> PRT
 <213> Glycine max

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      20                      25                      30

Ser Asn Arg Asn Ser Gln Phe Leu Thr Lys Gln Thr Arg Pro Arg Ser
      35                      40                      45

Arg Arg Asn Leu Ser Leu Thr Pro Ala Arg Val Ala Ala Pro Pro Ser
      50                      55                      60

Thr Val Glu Ala Asp Arg Leu Tyr Pro Glu Ala Glu Asn Asn Glu Thr
      65                      70                      75                      80

Glu Glu Glu Phe Ser Asp Glu Ser Ser Ser Lys Phe Thr Trp Arg Asp
      85                      90                      95

His Trp Tyr Pro Val Ser Leu Ile Glu Asp Leu Asn Pro Leu Leu Pro
      100                     105                     110

Thr Pro Phe Gln Leu Leu Gly Arg Glu Ile Val Leu Trp Tyr Asp Lys
      115                     120                     125

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Ser	Ile	Ser	Gln	Trp	Val	Ala	Phe	Asp	Asp	Lys	Cys	Pro	His	Arg	Leu	130	135	140
Ala	Pro	Leu	Ser	Glu	Gly	Arg	Ile	Asp	Glu	Asp	Gly	Lys	Leu	Gln	Cys	145	150	155
Ser	Tyr	His	Gly	Trp	Ser	Phe	Asp	Gly	Cys	Gly	Ser	Cys	Val	Lys	Ile	165	170	175
Pro	Gln	Ala	Ser	Ser	Glu	Gly	Pro	Glu	Ala	Arg	Ala	Ile	Gly	Ser	Pro	180	185	190
Lys	Ala	Cys	Ala	Thr	Arg	Phe	Pro	Thr	Leu	Val	Ser	Gln	Gly	Leu	Leu	195	200	205
Phe	Val	Trp	Ala	Asp	Glu	Asn	Gly	Trp	Glu	Lys	Ala	Lys	Ala	Ser	Asn	210	215	220
Pro	Pro	Met	Phe	Pro	Asp	Asp	Phe	Asp	Lys	Pro	Glu	Phe	Pro	Thr	Val	225	230	235
Asn	Ile	Gln	Arg	Asp	Leu	Phe	Tyr	Gly	Tyr	Asp	Thr	Leu	Met	Glu	Asn	245	250	255
Val	Ser	Asp	Pro	Ser	His	Ile	Glu	Phe	Ala	His	His	Lys	Val	Thr	Gly	260	265	270
Arg	Arg	Asp	Arg	Ala	Lys	Pro	Leu	Pro	Phe	Lys	Met	Asp	Ser	Arg	Gly	275	280	285
Ser	Trp	Gly	Phe	Ser	Gly	Ala	Asn	Glu	Gly	Asn	Pro	Gln	Ile	Ser	Ala	290	295	300
Lys	Phe	Val	Ala	Pro	Cys	Tyr	Met	Met	Asn	Lys	Ile	Glu	Ile	Asp	Thr	305	310	315
Lys	Leu	Pro	Val	Val	Gly	Asp	Gln	Lys	Trp	Val	Val	Trp	Ile	Cys	Ser	325	330	335
Phe	Asn	Val	Pro	Met	Ala	Pro	Gly	Lys	Thr	Arg	Ser	Ile	Val	Cys	Ser	340	345	350
Ala	Arg	Asn	Phe	Phe	Gln	Phe	Ser	Val	Pro	Gly	Pro	Ala	Trp	Trp	Gln	355	360	365
Val	Asn	Val	Ile	Leu	Leu	Phe	Ala	Phe	Asn	Phe	Lys	Gln	Cys	Ile	His	370	375	380
Val	Thr	Gln	Val	Val	Pro	Arg	Trp	Tyr	Glu	His	Trp	Thr	Ser	Asn	Lys	385	390	395
Val	Tyr	Asp	Gly	Asp	Met	Ile	Val	Leu	Gln	Gly	Gln	Glu	Lys	Ile	Phe	405	410	415
Leu	Ser	Glu	Thr	Lys	Glu	Gly	Gly	Asp	Ile	Asn	Lys	Gln	Tyr	Thr	Asn	420	425	430
Ile	Thr	Phe	Thr	Pro	Thr	Gln	Ala	Asp	Arg	Phe	Val	Leu	Ala	Phe	Arg	435	440	445

Asn	Trp	Leu	Arg	Arg	His	Gly	Asn	Gly	Gln	Pro	Glu	Trp	Phe	Gly	Asn
450						455					460				
Ser	Ser	Asp	Gln	Pro	Leu	Pro	Ser	Thr	Val	Leu	Ser	Lys	Arg	Gln	Met
465					470					475					480
Leu	Asp	Arg	Phe	Glu	Gln	His	Thr	Leu	Lys	Cys	Ser	Ser	Cys	Lys	Ala
				485					490					495	
Ala	Tyr	Glu	Gly	Phe	Gln	Thr	Trp	Gln	Lys	Val	Leu	Ile	Gly	Ala	Thr
			500					505					510		
Val	Val	Phe	Cys	Ala	Thr	Ser	Gly	Ile	Pro	Ser	Asp	Phe	Gln	Leu	Arg
		515					520					525			
Val	Leu	Leu	Ala	Gly	Leu	Ala	Val	Val	Ser	Ala	Ala	Ile	Ala	Phe	Ala
	530					535					540				
Leu	Asn	Gln	Leu	Gln	Lys	Asn	Phe	Glu	Phe	Val	Asp	Tyr	Val	His	Ala
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Glu Ile Asp

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 <211> 555
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 <213> Triticum aestivum

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 agcgtcaggc cccaactcgt cccgcggcga cgggcgcgcc gccaccgcaa cggggccgcg 180
 cggtatgctgc cggcctcggc cgtggcgctcc gagtcgccgt ggacggancca ggagccgcca 240
 tccggggaga angaggagcg gttcgactgg ctggaccagt ggtaccctt cggccccgtg 300
 gaggacctgg acccggcgcg cccacggcaa atggtgctgg gatccgcgtg gtanctggta 360
 caacgcggng cgggcgaatg gcgctgttca caccgtgccc gnacgcctgg cncgnctcga 420
 gggcgcacatc caaaaggcgg ncagtcgtta cacgggtggn ctcacgncgc gggctgaatt 480
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<210> 34
 <211> 144
 <212> PRT
 <213> Triticum aestivum

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 <222> (142)
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 1 5 10 15
 Leu Pro Leu Pro Thr Gly Val Gln Ala Pro Ser Val Arg Pro Gln Leu
 20 25 30

Val Pro Arg Arg Arg Ala Arg Arg His Arg Asn Gly Ala Ala Arg Met
 35 40 45
 Leu Pro Ala Ser Ala Val Ala Ser Glu Ser Pro Trp Thr Xaa Gln Glu
 50 55 60
 Pro Pro Ser Gly Glu Xaa Glu Glu Arg Phe Asp Trp Leu Asp Gln Trp
 65 70 75 80
 Tyr Pro Phe Ala Pro Val Glu Asp Leu Asp Pro Ala Arg Pro Arg Gln
 85 90 95
 Met Val Leu Gly Ser Ala Trp Xaa Leu Val Gln Arg Gly Ala Gly Glu
 100 105 110
 Trp Arg Cys Ser His Arg Ala Arg Thr Pro Gly Xaa Xaa Arg Gly Arg
 115 120 125
 Ile Thr Lys Gly Gly Gln Ser Leu His Gly Trp Xaa His Xaa Ala Gly
 130 135 140

<210> 35

<211> 1864

<212> DNA

<213> Triticum aestivum

<400> 35

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ccgaggaagg	aaggaaaggc	agacgaaatg	ccggtgctgg	cgatgccgtc	cgcctccctc	180
cccctcctct	cccccggggc	accggccgct	gctgcgcccg	tcgaccctcc	cggcctcccg	240
tctcggcagc	ggcatcctcc	gcgtggccgc	gccgacgtcg	gtccccggcg	aggcggagcg	300
ggcggaggag	ccgagcacga	gcacgagcac	ctcgccctgaa	tcgtccgggg	agaagttcgt	360
gtggcgggac	cactgggtacc	cggctctcgt	cgtggaggac	ctggaccgcg	gcgtgcccac	420
cccgttccag	ctcctcaacc	gcgacctcgt	catctggaac	gaccccaact	ccggcgactg	480
ggtcgcgcgc	gacgaccgct	gcccgcaccg	cctcgccccg	ctctcggagg	ggcggatcga	540
cgagacgggc	ggcctgcagt	gctcctacca	cggctggtcc	ttcgacgggt	ccggcgccctg	600
caccaggatc	ccgcaggccg	cgcccagagg	gcccagggcc	cgggcgggtgc	gctcgcccag	660
ggcctgcgcc	accaagttcc	ccaccctcct	ctcccagggc	ctgctcttcg	tctggcctga	720
cgagaatgga	tgggacaagg	ccaaggccac	caagcctcca	atgctgccga	aggagttcga	780
tgaccgggcc	ttctccaccg	tgacgatcca	gagggacctc	ttctatgggt	atgacacggt	840
gatggagaac	gtctctgatc	cctcgcata	agaatttgct	caccacaagg	tactggagcg	900
aagagataga	gccaagcctt	tgccatttaa	aatggaatca	agtggcgcgt	ggggatattc	960
aggggcaaat	accggcaatc	ctcgcatac	tgcaactttc	gaggccccct	gctatgcact	1020
gaacaaaata	gagattgaca	ccaaattacc	gattgtggga	gatcagaaat	gggtcatatg	1080
gatttgctcc	ttcaacattc	caatggcccc	agggaaaact	cgttctattg	tctgtagtgc	1140
tcgaaacttt	ttccagttta	caatgccagg	aaaggcatgg	tggcagtttg	tccctcgatg	1200
gtacgaacat	tggacctcaa	atgtgtctta	cgacggcgat	atgatcgtgc	ttcaaggcca	1260
agagaagggt	ttcctgtctg	catccaagga	gtcgtctgca	gatgttaatc	agcagtacac	1320
aaagctcaca	ttcacaccca	cacaggccga	ccgatttggt	ttagcattcc	gggcatggct	1380
acgaaaattc	ggaaatagcc	agcctgactg	gtatggaagt	cctagccaag	atgcattgcc	1440
ttctacggtc	ctttcaaagc	gagagatgct	agacagatac	gagcagcaca	cgctgaaatg	1500
ctcgtcctgc	agaggagcgc	acaaggcctt	tcagactttg	cagaagggtg	tcattggggg	1560
gacgggtggt	tttggcgcga	catccgggat	ccctgcggat	gttcagctca	gaatattgct	1620
cgggtgcggg	gctctggtca	gcgccgctct	ggcctatgtc	ttctacgacc	gccagaagca	1680
tttcgtgttt	gtggactacg	tgcacgctga	cattgattga	ttagggagat	aaacattagt	1740
tatttttgtg	aggatctggt	gtggtgtggt	gtggagacat	cccacgatca	atcatgtgca	1800
taacctagcc	aaggagtaca	tatagctttc	agtgggtaca	tgagattggc	ccagtatggt	1860
gttt						1864

<210> 36
<211> 487
<212> PRT
<213> Triticum aestivum

<400> 36

Leu	Arg	Val	Ala	Ala	Pro	Thr	Ser	Val	Pro	Gly	Glu	Ala	Glu	Arg	Ala	
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Glu	Glu	Pro	Ser	Thr	Ser	Thr	Ser	Thr	Ser	Pro	Glu	Ser	Ser	Gly	Glu	
			20					25					30			
Lys	Phe	Val	Trp	Arg	Asp	His	Trp	Tyr	Pro	Val	Ser	Leu	Val	Glu	Asp	
		35					40					45				
Leu	Asp	Pro	Arg	Val	Pro	Thr	Pro	Phe	Gln	Leu	Leu	Asn	Arg	Asp	Leu	
	50					55					60					
Val	Ile	Trp	Asn	Asp	Pro	Asn	Ser	Gly	Asp	Trp	Val	Ala	Leu	Asp	Asp	
	65				70					75					80	
Arg	Cys	Pro	His	Arg	Leu	Ala	Pro	Leu	Ser	Glu	Gly	Arg	Ile	Asp	Glu	
				85					90					95		
Thr	Gly	Gly	Leu	Gln	Cys	Ser	Tyr	His	Gly	Trp	Ser	Phe	Asp	Gly	Ser	
			100					105					110			
Gly	Ala	Cys	Thr	Arg	Ile	Pro	Gln	Ala	Ala	Pro	Glu	Gly	Pro	Glu	Ala	
		115					120					125				
Arg	Ala	Val	Arg	Ser	Pro	Arg	Ala	Cys	Ala	Thr	Lys	Phe	Pro	Thr	Leu	
	130					135					140					
Leu	Ser	Gln	Gly	Leu	Leu	Phe	Val	Trp	Pro	Asp	Glu	Asn	Gly	Trp	Asp	
	145				150					155					160	
Lys	Ala	Lys	Ala	Thr	Lys	Pro	Pro	Met	Leu	Pro	Lys	Glu	Phe	Asp	Asp	
				165					170					175		
Pro	Ala	Phe	Ser	Thr	Val	Thr	Ile	Gln	Arg	Asp	Leu	Phe	Tyr	Gly	Tyr	
			180					185					190			
Asp	Thr	Leu	Met	Glu	Asn	Val	Ser	Asp	Pro	Ser	His	Ile	Glu	Phe	Ala	
	195						200					205				
His	His	Lys	Val	Thr	Gly	Arg	Arg	Asp	Arg	Ala	Lys	Pro	Leu	Pro	Phe	
	210					215					220					
Lys	Met	Glu	Ser	Ser	Gly	Ala	Trp	Gly	Tyr	Ser	Gly	Ala	Asn	Thr	Gly	
	225				230					235					240	
Asn	Pro	Arg	Ile	Thr	Ala	Thr	Phe	Glu	Ala	Pro	Cys	Tyr	Ala	Leu	Asn	
				245					250					255		
Lys	Ile	Glu	Ile	Asp	Thr	Lys	Leu	Pro	Ile	Val	Gly	Asp	Gln	Lys	Trp	
			260					265					270			
Val	Ile	Trp	Ile	Cys	Ser	Phe	Asn	Ile	Pro	Met	Ala	Pro	Gly	Lys	Thr	
		275					280					285				

Arg Ser Ile Val Cys Ser Ala Arg Asn Phe Phe Gln Phe Thr Met Pro
 290 295 300
 Gly Lys Ala Trp Trp Gln Phe Val Pro Arg Trp Tyr Glu His Trp Thr
 305 310 315 320
 Ser Asn Leu Val Tyr Asp Gly Asp Met Ile Val Leu Gln Gly Gln Glu
 325 330 335
 Lys Val Phe Leu Ser Ala Ser Lys Glu Ser Ser Ala Asp Val Asn Gln
 340 345 350
 Gln Tyr Thr Lys Leu Thr Phe Thr Pro Thr Gln Ala Asp Arg Phe Val
 355 360 365
 Leu Ala Phe Arg Ala Trp Leu Arg Lys Phe Gly Asn Ser Gln Pro Asp
 370 375 380
 Trp Tyr Gly Ser Pro Ser Gln Asp Ala Leu Pro Ser Thr Val Leu Ser
 385 390 395 400
 Lys Arg Glu Met Leu Asp Arg Tyr Glu Gln His Thr Leu Lys Cys Ser
 405 410 415
 Ser Cys Arg Gly Ala His Lys Ala Phe Gln Thr Leu Gln Lys Val Phe
 420 425 430
 Met Gly Ala Thr Val Val Phe Gly Ala Thr Ser Gly Ile Pro Ala Asp
 435 440 445
 Val Gln Leu Arg Ile Leu Leu Gly Ala Gly Ala Leu Val Ser Ala Ala
 450 455 460
 Leu Ala Tyr Val Phe Tyr Asp Arg Gln Lys His Phe Val Phe Val Asp
 465 470 475 480
 Tyr Val His Ala Asp Ile Asp
 485

<210> 37

<211> 592

<212> PRT

<213> Arabidopsis thaliana

<400> 37

Met Glu Asp Pro Asp Ile Lys Arg Cys Lys Leu Ser Cys Val Ala Thr
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 Val Asp Asp Val Ile Glu Gln Val Met Thr Tyr Ile Thr Asp Pro Lys
 20 25 30
 Asp Arg Asp Ser Ala Ser Leu Val Cys Arg Arg Trp Phe Lys Ile Asp
 35 40 45
 Ser Glu Thr Arg Glu His Val Thr Met Ala Leu Cys Tyr Thr Ala Thr
 50 55 60
 Pro Asp Arg Leu Ser Arg Arg Phe Pro Asn Leu Arg Ser Leu Lys Leu
 65 70 75 80

Lys	Gly	Lys	Pro	Arg	Ala	Ala	Met	Phe	Asn	Leu	Ile	Pro	Glu	Asn	Trp	
				85					90					95		
Gly	Gly	Tyr	Val	Thr	Pro	Trp	Val	Thr	Glu	Ile	Ser	Asn	Asn	Leu	Arg	
				100					105					110		
Gln	Leu	Lys	Ser	Val	His	Phe	Arg	Arg	Met	Ile	Val	Ser	Asp	Leu	Asp	
				115					120					125		
Leu	Asp	Arg	Leu	Ala	Lys	Ala	Arg	Ala	Asp	Asp	Leu	Glu	Thr	Leu	Lys	
				130					135					140		
Leu	Asp	Lys	Cys	Ser	Gly	Phe	Thr	Thr	Asp	Gly	Leu	Leu	Ser	Ile	Val	
				145					150					155		
Thr	His	Cys	Arg	Lys	Ile	Lys	Thr	Leu	Leu	Met	Glu	Glu	Ser	Ser	Phe	
				165					170					175		
Ser	Glu	Lys	Asp	Gly	Lys	Trp	Leu	His	Glu	Leu	Ala	Gln	His	Asn	Thr	
				180					185					190		
Ser	Leu	Glu	Val	Leu	Asn	Phe	Tyr	Met	Thr	Glu	Phe	Ala	Lys	Ile	Ser	
				195					200					205		
Pro	Lys	Asp	Leu	Glu	Thr	Ile	Ala	Arg	Asn	Cys	Arg	Ser	Leu	Val	Ser	
				210					215					220		
Val	Lys	Val	Gly	Asp	Phe	Glu	Ile	Leu	Glu	Leu	Val	Gly	Phe	Phe	Lys	
				225					230					235		
Ala	Ala	Ala	Asn	Leu	Glu	Glu	Phe	Cys	Gly	Gly	Ser	Leu	Asn	Glu	Asp	
				245					250					255		
Ile	Gly	Met	Pro	Glu	Lys	Tyr	Met	Asn	Leu	Val	Phe	Pro	Arg	Lys	Leu	
				260					265					270		
Cys	Arg	Leu	Gly	Leu	Ser	Tyr	Met	Gly	Pro	Asn	Glu	Met	Pro	Ile	Leu	
				275					280					285		
Phe	Pro	Phe	Ala	Ala	Gln	Ile	Arg	Lys	Leu	Asp	Leu	Leu	Tyr	Ala	Leu	
				290					295					300		
Leu	Glu	Thr	Glu	Asp	His	Cys	Thr	Leu	Ile	Gln	Lys	Cys	Pro	Asn	Leu	
				305					310					315		
Glu	Val	Leu	Glu	Thr	Arg	Asn	Val	Ile	Gly	Asp	Arg	Gly	Leu	Glu	Val	
				325					330					335		
Leu	Ala	Gln	Tyr	Cys	Lys	Gln	Leu	Lys	Arg	Leu	Arg	Ile	Glu	Arg	Gly	
				340					345					350		
Ala	Asp	Glu	Gln	Gly	Met	Glu	Asp	Glu	Glu	Gly	Leu	Val	Ser	Gln	Arg	
				355					360					365		
Gly	Leu	Ile	Ala	Leu	Ala	Gln	Gly	Cys	Gln	Glu	Leu	Glu	Tyr	Met	Ala	
				370					375					380		
Val	Tyr	Val	Ser	Asp	Ile	Thr	Asn	Glu	Ser	Leu	Glu	Ser	Ile	Gly	Thr	
				385					390					395		

Tyr Leu Lys Asn Leu Cys Asp Phe Arg Leu Val Leu Leu Asp Arg Glu
 405 410 415
 Glu Arg Ile Thr Asp Leu Pro Leu Asp Asn Gly Val Arg Ser Leu Leu
 420 425 430
 Ile Gly Cys Lys Lys Leu Arg Arg Phe Ala Phe Tyr Leu Arg Gln Gly
 435 440 445
 Gly Leu Thr Asp Leu Gly Leu Ser Tyr Ile Gly Gln Tyr Ser Pro Asn
 450 455 460
 Val Arg Trp Met Leu Leu Gly Tyr Val Gly Glu Ser Asp Glu Gly Leu
 465 470 475 480
 Met Glu Phe Ser Arg Gly Cys Pro Asn Leu Gln Lys Leu Glu Met Arg
 485 490 495
 Gly Cys Cys Phe Ser Glu Arg Ala Ile Ala Ala Ala Val Thr Lys Leu
 500 505 510
 Pro Ser Leu Arg Tyr Leu Trp Val Gln Gly Tyr Arg Ala Ser Met Thr
 515 520 525
 Gly Gln Asp Leu Met Gln Met Ala Arg Pro Tyr Trp Asn Ile Glu Leu
 530 535 540
 Ile Pro Ser Arg Arg Val Pro Glu Val Asn Gln Gln Gly Glu Ile Arg
 545 550 555 560
 Glu Met Glu His Pro Ala His Ile Leu Ala Tyr Tyr Ser Leu Ala Gly
 565 570 575
 Gln Arg Thr Asp Cys Pro Thr Thr Val Arg Val Leu Lys Glu Pro Ile
 580 585 590

<210> 38

<211> 520

<212> PRT

<213> Zea mays

<400> 38

Met Arg Ala Thr Ile Pro Ala Leu Ser Leu Leu Val Thr Pro Arg Leu
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 Pro Ser Leu Ala Val Pro Leu Ala Gly Gly Arg Leu Arg Glu Gly Gly
 20 25 30
 Arg Ser Arg Thr Arg Leu Arg Val Ala Ala Pro Thr Ser Val Pro Gly
 35 40 45
 Glu Ala Ala Glu Gln Ala Glu Pro Ser Thr Ser Ala Pro Glu Ser Gly
 50 55 60
 Glu Lys Phe Ser Trp Arg Asp His Trp Tyr Pro Val Ser Leu Val Glu
 65 70 75 80
 Asp Leu Asp Pro Ser Arg Pro Thr Pro Phe Gln Leu Leu Asn Arg Asp
 85 90 95

Leu	Val	Ile	Trp	Lys	Glu	Pro	Lys	Ser	Gly	Glu	Trp	Val	Ala	Leu	Asp	100	105	110
Asp	Arg	Cys	Pro	His	Arg	Leu	Ala	Pro	Leu	Ser	Glu	Gly	Arg	Ile	Asp	115	120	125
Glu	Thr	Gly	Cys	Leu	Gln	Cys	Ser	Tyr	His	Gly	Trp	Ser	Phe	Asp	Gly	130	135	140
Ser	Gly	Ala	Cys	Thr	Lys	Ile	Pro	Gln	Ala	Met	Pro	Glu	Gly	Pro	Glu	145	150	155
Ala	Arg	Ala	Val	Arg	Ser	Pro	Lys	Ala	Cys	Ala	Ile	Lys	Phe	Pro	Thr	165	170	175
Leu	Val	Ser	Gln	Gly	Leu	Leu	Phe	Val	Trp	Pro	Asp	Glu	Asn	Gly	Trp	180	185	190
Glu	Lys	Ala	Ala	Ala	Thr	Lys	Pro	Pro	Met	Leu	Pro	Lys	Glu	Phe	Glu	195	200	205
Asp	Pro	Ala	Phe	Ser	Thr	Val	Thr	Ile	Gln	Arg	Asp	Leu	Phe	Tyr	Gly	210	215	220
Tyr	Asp	Thr	Leu	Met	Glu	Asn	Val	Ser	Asp	Pro	Ser	His	Ile	Glu	Phe	225	230	235
Ala	His	His	Lys	Val	Thr	Gly	Arg	Arg	Asp	Arg	Ala	Arg	Pro	Leu	Thr	245	250	255
Phe	Arg	Met	Glu	Ser	Ser	Gly	Ala	Trp	Gly	Tyr	Ser	Gly	Ala	Asn	Ser	260	265	270
Gly	Asn	Pro	Arg	Ile	Thr	Ala	Thr	Phe	Glu	Ala	Pro	Cys	Tyr	Ala	Leu	275	280	285
Asn	Lys	Ile	Glu	Ile	Asp	Thr	Lys	Leu	Pro	Ile	Phe	Gly	Asp	Gln	Lys	290	295	300
Trp	Val	Ile	Trp	Ile	Cys	Ser	Phe	Asn	Ile	Pro	Met	Ala	Pro	Gly	Lys	305	310	315
Thr	Arg	Ser	Ile	Val	Cys	Ser	Ala	Arg	Asn	Phe	Phe	Gln	Phe	Thr	Met	325	330	335
Pro	Gly	Lys	Ala	Trp	Trp	Gln	Leu	Val	Pro	Arg	Trp	Tyr	Glu	His	Trp	340	345	350
Thr	Ser	Asn	Leu	Val	Tyr	Asp	Gly	Asp	Met	Ile	Val	Leu	Gln	Gly	Gln	355	360	365
Glu	Lys	Ile	Phe	Leu	Ala	Ala	Thr	Lys	Glu	Ser	Ser	Thr	Asp	Ile	Asn	370	375	380
Gln	Gln	Tyr	Thr	Lys	Ile	Thr	Phe	Thr	Pro	Thr	Gln	Ala	Asp	Arg	Phe	385	390	395
Val	Leu	Ala	Cys	Arg	Thr	Trp	Leu	Arg	Lys	Phe	Gly	Asn	Ser	Gln	Pro	405	410	415

Glu	Trp	Phe	Gly	Asn	Pro	Thr	Gln	Glu	Ala	Leu	Pro	Ser	Thr	Val	Leu	
			420				425						430			
Ser	Lys	Arg	Glu	Met	Leu	Asp	Arg	Tyr	Glu	Gln	Leu	Ser	Leu	Lys	Cys	
			435				440						445			
Ser	Ser	Cys	Lys	Gly	Ala	Tyr	Asn	Ala	Phe	Gln	Asn	Leu	Gln	Lys	Val	
			450				455						460			
Phe	Met	Gly	Ala	Thr	Val	Val	Cys	Cys	Ala	Ala	Ala	Gly	Ile	Pro	Pro	
			465				470						475			
Asp	Val	Gln	Leu	Arg	Leu	Leu	Ile	Gly	Ala	Ala	Ala	Leu	Val	Ser	Ala	
			485						490						495	
Ala	Ile	Ala	Tyr	Ala	Phe	His	Glu	Leu	Gln	Lys	Asn	Phe	Val	Phe	Val	
			500						505						510	
Asp	Tyr	Val	His	Ala	Asp	Ile	Asp									
			515			520										